

NEW RECORDS OF A FLATHEAD FISH, *ONIGOCIA GRANDISQUAMA*
(REGAN, 1908) (TELEOSTEI: PLATYCEPHALIDAE) FROM AUSTRALIA

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Imamura, H. & McGrouther, M. 2008 04 30: New records of a flathead fish, *Onigocia grandisquama* (Regan, 1908) (Teleostei: Platycephalidae) from Australia. *Memoirs of the Queensland Museum* 52(2): 239–243. Brisbane. ISSN 0079-8835.

Thirteen specimens of a poorly known platycephalid fish, *Onigocia grandisquama* (Regan, 1908), were collected from Queensland, eastern Australia. This species can be easily separated from its congeners by having 11–12 (usually 11) anal fin rays, large head (41.1–45.3% SL), ocular flap present, iris lappet short and with multiple branches dorsally, 1–2 preocular spines, and interopercular flap absent. These specimens are the first records of the species from Australia and only the second record from the western Pacific. □ *Onigocia grandisquama*, *Platycephalidae*, first record from Australia, western Pacific

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The genus *Onigocia* Jordan & Thompson, 1914 is diagnosed by having a finely serrated suborbital ridge and usually less than 40 pored lateral line scales. Six valid species are known: *O. bimaculata* Knapp, Imamura & Sakashita, 2000, *O. grandisquama* (Regan, 1908), *O. macrolepis* (Bleeker, 1854) (type species of *Onigocia*), *O. oligolepis* (Regan, 1908), *O. pedimacula* (Regan, 1908) and *O. spinosa* (Temminck & Schlegel, 1842; Imamura, 1996; Knapp et al., 2000). The relatively rare species, *O. grandisquama*, has not previously been reported from Australian waters (e.g., Sainsbury et al., 1985; Knapp, 1999; Knapp et al., 2000). To date the species has been recorded from the following five localities: Amirante Islands (Seychelles), Mauritius, Somalia, Arabian Sea and Gulf of Thailand (Regan, 1908; Imamura & Sakashita, 1997; Knapp, 1999; Manilo & Bogorodsky, 2003).

A single specimen of *Onigocia* collected from Queensland, eastern Australia was recently found in the Ichthyology Collection at the Australian Museum. After a detailed examination, this specimen was identified as *O. grandisquama*. Subsequently it was brought to our notice that there were an additional 12 specimens of the species deposited at the Queensland Museum. These specimens are the first records of the species from Australia, and only the second record from the western Pacific.

MATERIALS AND METHODS

Counts and measurements were made following Hubbs & Lagler (1958) and were routinely

taken from the left side, while gill rakers were counted on the right side. Measurements were made with calipers to the nearest 0.1 mm. Head spine terminology follows Knapp et al. (2000). Standard and head lengths are abbreviated as SL and HL, respectively. Institutional acronyms follow Leviton et al. (1985), except for National History Museum and Institute, Chiba (CMNH).

Onigocia grandisquama (Regan, 1908) (Figs 1–2)

Platycephalus grandisquamis Regan, 1908: 239 (original description; Amirante Islands, Seychelles, western Indian Ocean).

Onigocia grandisquamis: Matsubara & Ochiai, 1955: 71 (discussion on generic position).

Onigocia grandisquama: Imamura, 1996: 214 (discussion on generic position); Imamura & Sakashita, 1997: 119, figs 1–4 (redescription; Amirante Islands, Seychelles, western Indian Ocean and Gulf of Thailand, western Pacific); Knapp et al., 2000: 8 (list of comparative material; Amirante Islands, Mauritius and Somalia, western Indian Ocean); Manilo & Bogorodsky, 2003: S103 (list, Arabian Sea).

MATERIAL EXAMINED. AMS I.24489-005 (68.6 mm SL), 4 miles east of North Reef (23°09'S, 151°58'E), 64 m, 14.12.1977. W. Ponder et al.; QM I.23086 (73.1 mm SL), off Swain Reefs (21°37.8'S, 151°53.8'E), 45 m, 18.09.1986; QM I.23267 (64.7 mm SL), near Keeper Reef (18°46.2'S, 147°12.6'E), 42 m, 18.10.1985; QM I.36770 (77.5 mm SL), 23°17.7'S, 151°35.7'E, 37 m, 20.09.2004; QM I.36807 (63.4 mm SL), 21°46.5'S, 151°50.1'E, 60 m, 8.10.2004; QM I.37439 (72.9 mm SL), off Swain Reefs (21°13'S, 150°43'E), 47 m, 16.09.2005; QM I.37839, 5 specimens (46.8–72.9 mm SL), 21°08.7'S, 152°05.1'E, 58 m, 22.11.2005; QM-I37923 (64.6 mm SL), 23°06.9'S,

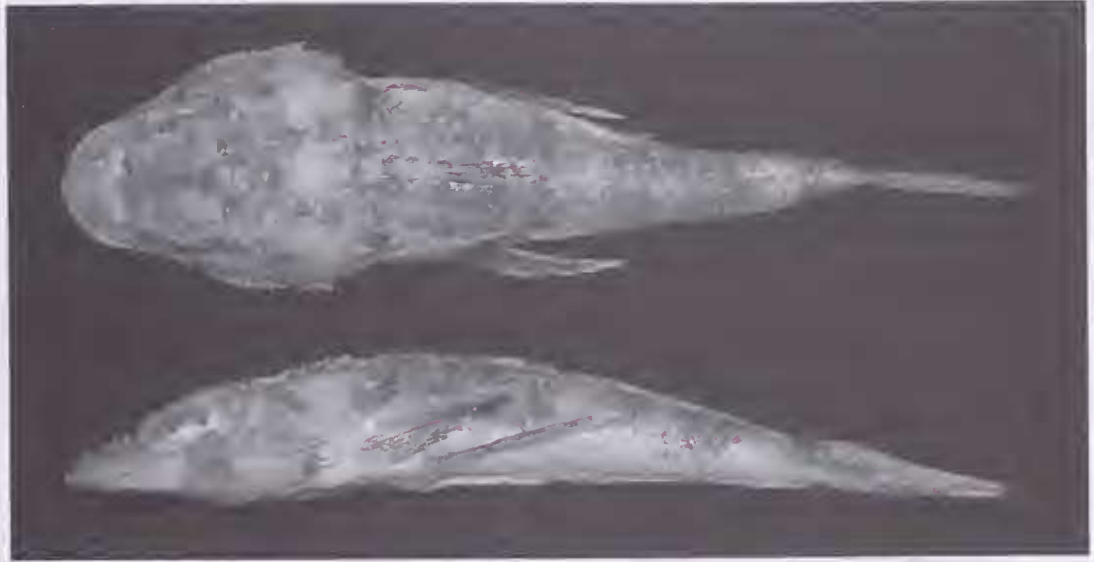


FIG. 1. Dorsal (upper) and lateral (lower) views of *Onigocia grandisquama*, QM I.36770, 77.5mm SL, collected from Queensland, eastern Australia.

151°44.7'E, 48m, 9.11.2005; QM-I40097 (66.6mm) SL, 19°26.1'S, 149°40.5'E, 74m, 26.11.2005

DIAGNOSIS. A species of *Onigocia* with 11 anal fin rays (infrequently 12), large head, ocular flap present, iris lappet short and with multiple branches dorsally, 1–2 preocular spines and no interopercular flap.

DESCRIPTION. Counts and proportional measurements are given in Table 1. Body depressed. Head flattened and broad. Snout spatulate, shorter than eye diameter. Eye with single ocular flap dorsally. Iris lappet short, with multiple branches dorsally, usually bilobed or rarely simple ventrally (Fig. 2). Interorbit narrow and coneave. Head bearing many spines dorsally and laterally. Nasal with one small spine. One or two ethmoid spines present. Lacrymal with two or three (usually two) antrorse spines anteriorly. One or two (usually

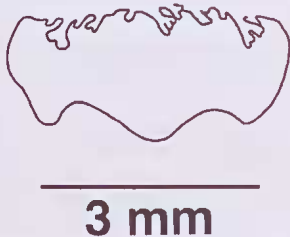


FIG. 2. Iris lappet (left eye) of *Onigocia grandisquama*, AMS I.24489-005, 68.6 mm SL, collected from Queensland, eastern Australia.

one) sharp preocular spines present. Suborbital ridge finely serrated. Supraorbital ridge finely serrated along entire length except for anterior region. Postorbital region with a group of one to eight (usually four to six) small spines. Pterotic with serrated ridge comprised of four to seven, or nine small spines. A single nuchal spine on supraclithrum; posttemporal and supratemporal with one to three spines, respectively. Preopercle with three spines; uppermost longest, not reaching posterior margin of opercle, bearing one supplementary spine. Base of upper and lower opercular spines without serrations. Interopercular flap absent. Maxilla reaching beyond anterior margin of pupil. Villiform teeth in single bands on jaws and palatine, in two separate patches on vomer; teeth on anteromedial portion of upper jaw, palatine and posterior portion of vomer, and in innermost row of lower jaw slightly longer and rather pointed. Tooth band on upper jaw without a distinct notch anteromedially. Lip margins without papillae. Sensory tubes from suborbitals and preopercle well developed, completely covering cheek region. Pored scales in lateral line with two exterior openings posteriorly. First dorsal fin originating slightly behind opercular margin. First and second dorsal fins narrowly separated. Pectoral fin rounded posteriorly. Posterior tip of pelvic fin reaching to base of third to fifth anal fin ray. Caudal fin mostly straight or slightly rounded posteriorly.

TABLE 1: Comparison of counts and proportional measurements of *Onigocia grandisquama*.

Measurement	Present specimens	BMNH 1908.3.23.209
Number	13	1 (holotype)
SL (mm)	46.8–77.5	54.4
Counts:		
First dorsal fin rays	1–VII–VIII (usually VIII)	1–VIII
Second dorsal fin rays	10–11 (usually 11)	11
Anal fin rays	11–12 (usually 11)	11
Pectoral fin rays	19–21 (often 20)	21
Pelvic fin rays	1,5	1,5
Branched caudal fin rays (upper + lower)	4–5 + 4–5	Broken
Pored scales in lateral line (with spine)	34–39 (3–8)	32 (4)
Gill rakers	1 + 4–5 = 5–6 (usually 1 + 4 = 5)	1 + 4 = 5
Proportional measurements (% SL):		
HL	41.1–45.3	44.7
Predorsal length	39.8–42.8	42.6
Length of first dorsal fin base	18.5–23.4	20.2
Length of second dorsal fin base	22.8–27.3	24.1
Length of anal fin base	25.9–29.2	27.4
Caudal peduncle length	8.0–9.5	9.0
Caudal peduncle depth	4.9–5.8	5.1
Snout length	10.8–11.5	11.2
Orbital diameter	13.4–14.8	14.7
Upper jaw	16.2–18.0	17.6
Lower jaw	22.4–24.7	24.1
Interorbital width	1.6–2.6	2.4
Pectoral fin length	17.3–19.9	19.9
Pelvic fin length	27.9–32.3	Broken
Caudal fin length	22.8–25.5	Broken
Length of first dorsal spine	6.6–9.5	7.5
Length of second dorsal spine	15.0–18.3	16.5
Length of first dorsal soft ray	14.0–16.7	Broken
Length of first anal fin ray	9.2–13.1	11.8
Proportional measurements (% HL):		
Snout length	24.8–26.5	25.1
Orbital diameter	32.1–33.3	32.1
Upper jaw	38.8–40.7	39.5
Lower jaw	52.4–56.1	53.9
Interorbital width	3.6–5.8	5.3

Colour in alcohol. Head and body light brown dorsally, pale ventrally. Head with slightly darker band crossing occipital region and cheek; indistinct or somewhat distinct narrow brown band or patch below eye. Body with two broad, saddle-like, brown bands below both dorsal fins (band below second dorsal fin on left side in QM-I36770 separated into two indistinct narrower bands, see lower photograph in Fig. 1), and one brown patch on caudal peduncle (patches on both sides partially continuous). First dorsal fin with grayish or blackish band, with several unpigmented areas along spines. Second dorsal fin with several small brown spots and/or melanophores. Anal fin pale or with few brownish spots or dusky areas. Upper 1/3 of pectoral fin with melanophores or small brown spots, which tend to comprise bands; lower 2/3 dark brownish or blackish except for pale brown lower margin and basal portion. Pelvic fin dark brownish to blackish except for pale outer margin. Caudal fin margin with distinct or indistinct narrow brownish band; rest of fin with or without small brownish spots and/or melanophores.

DISTRIBUTION. Known only from Amirante Islands, Mauritius, Somalia, Arabian Sea, Gulf of Thailand and Queensland, eastern Australia (Regan, 1908; Imamura & Sakashita, 1997; Knapp, 1999; Manilo & Bogorodsky, 2003; this study).

REMARKS. The specimens of *Onigocia* collected from eastern Australia agree well with the examined holotype of *O. grandisquama* (BMNH 1908.3.23.209), in having an ocular flap, iris lappet short and with multiple branches dorsally, 1–2 ocular spines, and lacking an interopercular flap. In addition, counts and proportional measurements of specimens examined in this study are similar to those of the holotype, except for having 34–39 pored scales in the lateral line (vs. 32 in holotype of *O. grandisquama*). Knapp et al. (2000) stated that the number of the pored scales in the lateral line of *O. grandisquama* ranged from 31 to 39. We identify the present specimens as *O. grandisquama*, recognising the variation in the lateral line scales as intra-specific, as pointed out by Knapp et al. (2000). *Onigocia grandisquama* can be easily separated from other members of the genus in having the following combination of characters: usually 11 anal fin rays [vs. 11–13 (usually 12) in *O. macrolepis* and 12 in *O. spinosa*], larger head (41.1–45.3% SL in *O. grandisquama* vs. 33.8–39.3% SL in *O. bimaculata*, 35.2–38.9% in *O. macrolepis* and 36.8–42.1% in *O. spinosa*), an

ocular flap and iris lappet that is short and with multiple branches dorsally (usually bilobed ventrally) (vs. ocular flap absent and iris lappet bilobed, simple or crenate in all *Onigocia* except for *O. macrolepis* and *O. spinosa* which have short and multiple branches to the iris lappets), 1–2 preocular spines (vs. 3 or more in all *Onigocia* except for *O. macrolepis*, which has one spine) and lacking an interopercular flap (vs. present in *O. bimaculata*) (data from Regan, 1908; Imamura & Sakashita, 1997; Knapp, 2000; this study).

COMPARATIVE MATERIAL. Most comparative material examined was listed in Imamura & Sakashita (1997). However, their *Onigocia oligolepis* (Regan, 1908) may be an undescribed species (Knapp, pers. comm.); thus, its data were not included here. Additional comparative material is listed below:

Onigocia bimaculata (4 specimens): CMNH ZF13964 (66.6mm SL), Yakushima Island, Japan; NSMT-P 54247 (holotype, 58.6mm SL), NSMT-P 45638, P 54248, P 54249 (3 paratypes, 23.2–36.8mm SL), Ryukyu Islands, Japan.

Onigocia pedimacula (4 specimens): NSMT-P 69917 (4, 62.0–73.2mm SL), Indonesia.

Onigocia spinosa (1 specimen): AMS I.22831-013 (1 of 11, 72.8mm SL), northwestern Australia.

ACKNOWLEDGEMENTS

We are deeply indebted to L. Knapp (USNM) for providing taxonomic information on *Onigocia*. We also thank to H. Aizawa (CMNH), A.-M. Hodges (formerly BMNH), J.W. Johnson (QM) and G. Shinohara (NSMT) for making material available. We express our thanks to A. Hay and S. Reader (AMS) for assistance during the senior author's visit to AMS, and for sending AMS specimens on loan.

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